

## REMARKS

The Claims are 1, 2, 7-11, 14-18, 20-25, 28-30, and 34. Applicants respectfully request favorable reconsideration in light of the present remarks.

First, Applicants gratefully acknowledge the indication that Claims 20 and 21 include allowable subject matter and would be allowable if rewritten in proper independent form. Nonetheless, these claims have not been so rewritten for the reasons discussed below.

Claims 14-17, 23 and 28 have been amended to place those claims in proper multiple dependent form. These changes are not new matter.

The Examiner has rejected Claims 1, 2, 7-18, 22, 23, 28-30 and 34 under 35 U.S.C. §103(a) as allegedly being unpatentable over Winskill et al., Animal Behavior Science 48:25-35 (1996) in view of Johnson et al., Equine Veterinary Journal 30(2): 139-143 (1998), further in view of Pagan, Australian Equine Journal 16(4): 159-161 (1998). Applicants respectfully traverse the grounds for these rejections.

The Examiner contends that, overall, “[i]t would have been obvious to one of ordinary skill in the art . . . to use the composition of Winskill to treat stereotypic behavior and to incorporate [the] antacid of Johnson or Pagan with the expectation of lowering or reducing the acidity of the hindgut.” With regard to Winskill, in the first paragraph at page 3 of the Office Action, the Examiner states that this reference discloses a food composition comprising “100 g protein, 200 g fiber (about 48.5%), 27.5 g oil (about 6.7%) and 85g ash”. Applicants respectfully disagree with the Examiner’s calculations. Specifically, the percentages referred to at page 3 are for each kilogram of the pelleted food. *See* Winskill at 28 (“Each kilogram of the food contained 100 g of protein, 200 g of fibre, 27.5 g of oil and 85 g of ash;”). When converted into grams, however, the actual

percentages of fiber and fat are only 20% and 2.75%, respectively. Accordingly, these amounts are outside the range specified in Claim 1 of the present invention. There is also no disclosure in Winskill as to whether any of the fiber is chopped fiber.

Moreover, unlike the present invention, Winskill does not suggest the composition of the foodball as being a factor affecting behavior; rather, Winskill teaches that the inability to express foraging behavior causes the development of stereotypies and, consequently, the foodball itself constitutes a useful behavior enrichment device. *See* Winskill, at pages 33 and 34 (“Since the nutritional content of the pelleted food is very similar to that of hay ... it appears that using the Foodball was the important factor. . . . This study has shown that stabled horses will use a modified version of the ‘Edinburgh Foodball’ as a foraging device in a manner and pattern resembling normal grazing behaviour. Thus, the Foodball appears to be a useful behavioural enrichment device for stabled horses”). As such, in Winskill it is not the precise percentages of fat and fiber that are critical to alleviating stereotypic behavior, but only that some sort of behavior enrichment device be used to promote foraging conduct. This is counter to the present application where both the fat and fiber are claimed in a preferred range.

As to Johnson, Applicants kindly draw the Examiner’s attention to the fact that this reference only discusses a link between stereotypy and acidity of the hindgut. Such hindgut acidity is entirely separate from the stomach acidity addressed by Applicants, and is the crucial distinction between the cited document and the present invention. Accordingly, though Johnson discusses supplementing the feed with Founderguard, if one of ordinary skill were to combine it with the composition of Winskill, this would still not produce a composition within the scope of Claim 1 since Founderguard is not a stomach antacid.

Further at page 7, the Examiner has indicated that “[s]odium carbonate does not necessarily have to be administered to the hindgut to relieve hindgut acidity. . . . orally administering sodium carbonate delivers the sodium carbonate to the stomach and sodium carbonate is an oral antacid.” However, sodium carbonate would be neutralized by the acid in the stomach if administered orally. *See* Rowe et al., International Horse Industry Symposium, RIRDC, 2001, left page, point 4 (“Buffers such as sodium bicarbonate are unlikely to reach the hindgut as the acidic conditions in the stomach convert all bicarbonate to carbon dioxide and water.”). There is also a change in pH along the digestive system from the acidity of the stomach to an alkaline environment in the small intestine, to neutral/acidic in the hindgut. *See* Argenzio et al., Am J Physiol 226, page 1048 (1974). Further still, dramatic changes in fluid volume also occur as food passes from stomach to hindgut. *See generally* Kohnke, J., “Feeding and Nutrition of Horses” (1998) (figure and table). Accordingly, one of ordinary skill would be cognizant that hindgut acidity can only be lowered by caecal infusion and not by oral administration. *See* Willard et al., “Effect of Diet on Cecal pH and Feeding Behavior of Horses”, J. Anim. Sci. 45, page 87 (1977).

Following Johnson, one of ordinary skill in the art would only have been motivated to reduce hindgut acidity in order to lower the incidence of stereotypy and, recognizing that sodium carbonate would be neutralized prior to reaching the hindgut, would not proceed by oral administration. Alternatively, caecal delivery of sodium carbonate, though effective for hindgut acidity, would in turn fail to have any effect on stomach acidity. Thus, the teaching of Johnson is limited to reducing hindgut acidity. Accordingly, there is no motivation for one of ordinary skill to use sodium carbonate as a stomach antacid.

Applicants therefore submit that a combination of Winskill and Johnson,

assuming such combination would even be permissible, would fail to teach a method for treating stereotypy by reducing stomach acidity. Winskill describes the effect of a behavior enrichment device on stabled horses, without recognizing feed composition as an important factor in reducing stereotypy. While Johnson does make the link between animal behavior and acidity, instructing either Founderguard or sodium carbonate to lower the incidence of stereotypy, these are effective only for hindgut acidity. Consequently, a combination of these references would, at best, result in a reduction of hindgut acidity by caecal infusion accompanied by use of a behavior enrichment device to encourage foraging behavior. No suggestion has been found in either Winskill or Johnson for a stomach antacid incorporated as part of the feed composition recited in Claim 1. Therefore, it is respectfully submitted that Claims 1, 2, 7-18, 22, 23, 28-30 and 34 cannot be obvious in view of a combination of Winskill and Johnson.

Pagan fails to remedy the deficiencies of both Winskill and Johnson. Pagan relates only to the treatment of equine gastric ulcers. On page 160, the reference discusses three classes of drugs that can be used to inhibit gastric acid secretion: (I) histamine type-2 antagonists, which block histamine-stimulated gastric acid secretion; (ii) H<sup>+</sup>/K<sup>+</sup> ATPase inhibitors, which are proton pump inhibitors; and (iii) prostaglandin analogs. However, there is no disclosure anywhere in the document of a link between gastric acidity and the behavior of horses.

Applicants respectfully submit that a combination of Pagan is not proper to either the teachings of Winskill or Johnson. Since neither reference recognizes the link between stereotypy and acidity, one of ordinary skill working from Winskill would not be motivated to incorporate the antacids of Pagan. Similarly, it would not have been obvious for one of ordinary skill to incorporate the antacids of Pagan with the teaching of Johnson

because none of the three classes of drugs disclosed in Pagan is expected to have any effect on hindgut acidity. In sum, Applicants maintain that Claims 1, 2, 7-18, 22, 23, 28-30 and 34 are patentable over the cited art, and respectfully request withdrawal of the rejection under 35 U.S.C. § 103(a).

Also in the Office Action, Claims 24 and 25 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Winskill, again in view of Johnson and Pagan. These rejections are respectfully traversed.

Here, the Examiner maintains that “[o]ne having ordinary skill in the art would have been motivated to include the antacid of Johnson or Pagan in the feed of Winskill . . . with the expectation of reducing hindgut acidity or controlling pH of the hindgut and thus minimizing the incidence of stereotypy in horses.” (Office Action, page 6; Emphasis added). Yet as discussed above, Winskill does not recognize that administration of a fat and fiber composition is an effective treatment for animal behavior. Instead, it merely teaches that foraging conduct, encouraged with a behavior enrichment device (such as the Edinburgh Foodball) may reduce the incidence of stereotypy. As to Johnson, it is believed the Examiner fails to appreciate that hindgut acidity is separate and distinct from stomach acidity. Johnson teaches that abnormal behavior is associated with acidosis in the hindgut, but does not contain any suggestion of a link between ulcer formation in the stomach and stereotypic behavior.

Moreover, while Applicants acknowledge that Pagan discusses treating equine ulcers by inhibiting gastric secretion or neutralizing stomach acidity, this reference is silent as to whether doing so will at all impact behavior. There is no teaching in any of the cited references, whether taken together or separately, that minimizing or reducing ulcer formation, or treating ulcers in the stomach, can be effective at treating, ameliorating,


or minimizing stereotypy. Accordingly, it would not have been obvious for one of ordinary skill in the art to remedy stereotypy by treating stomach ulcers. It is therefore submitted that Claims 24 and 25 are patentable over the combination of Winskill with either Johnson or Pagan.

Wherefore, it is respectfully submitted that the presently claimed invention is not disclosed or suggested by the art of record whether taken alone or together.

Accordingly, it is respectfully requested that the claims be allowed and the case passed to issue.

Applicants' undersigned attorney may be reached in our New York Office by telephone at (212) 218-2100. All correspondence should continue to be directed to our address listed below.

Respectfully submitted,

  
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